

UNITED STATES DISTRICT COURT
FOR THE
DISTRICT OF VERMONT

LESLIE ADEL and JOANNE ADEL	:	
	:	
Plaintiffs,	:	
	:	
v.	:	File No. 2:02-CV-21
	:	
GREENSPRINGS OF VERMONT, INC.,	:	
DENNIS GLENNON, THOMAS CROSS,	:	
and ROBERT RUBIN	:	
	:	
Defendants.	:	

MEMORANDUM AND ORDER: DAUBERT ISSUES

_____ In this action, plaintiffs Leslie and Joanne Adel claim that Leslie Adel contracted Legionnaires' disease from a contaminated water supply maintained by the defendants. The defendants have filed a motion for summary judgment (Doc. 78). As part of their argument, the defendants claim that the opinion of the plaintiffs' expert, Dr. Jennifer Clancy, is inadmissible under the Federal Rules of Evidence. The plaintiffs have moved to preclude the testimony of the defendants' expert, Dieter Gump, M.D. (Doc. 87). Both sides move to exclude the expert testimony on the basis of Fed. R. Evid. 702 and the holding of Daubert v. Merrell Dow Pharm., Inc., 509 U.S. 579 (1993). For the reasons set forth below, the plaintiffs' motion to preclude the testimony of Dieter Gump, M.D. is DENIED and the defendants' Motion for Summary Judgment is DENIED to the extent that it requests the exclusion of Dr. Jennifer Clancy's testimony.

I. Legal Standard

A. Federal Rule of Evidence 401(a)

These challenges to expert testimony are decided under a different standard than the summary judgment motion. When considering a summary judgment motion, the evidence is reviewed in the light most favorable to the nonmoving party, with all ambiguities resolved and all reasonable inferences drawn in its favor. Weyant v. Okst, 101 F.3d 845, 854 (2d Cir. 1996). In contrast, the challenges to expert testimony raise a preliminary evidentiary question. In effect, the parties are disputing whether the expert opinions are "evidence" that should be weighed by the court at all.

When faced with a challenge to expert testimony, the court's inquiry is conducted pursuant to Fed. R. Evid. 104(a). Daubert, 509 U.S. at 592. Under Rule 104(a), the Court is not bound by the rules of evidence in making its determination. Fed. R. Evid. 104(a).¹ A party proffering expert testimony should establish the testimony's admissibility by a preponderance of proof. Daubert, 509 U.S. at 593 n.10; Plourde v. Gladstone, 190 F. Supp.

¹The plaintiffs argue that the defendants' Motion for Summary Judgment is "procedurally deficient" because it relies on journal articles. Under Fed. R. Civ. P. 56(e), a motion for summary judgment should be based on affidavits that "set forth such facts as would be admissible in evidence." Standing alone, journal articles would not be admissible for the truth of matters asserted within. Nevertheless, because these articles are used to challenge the *admissibility* of proposed expert testimony, the Court can consider them under Fed. R. Evid. 104(a).

2d 708, 718-19 (D. Vt. 2002).

If the court finds that the evidence is admissible, the opposing party may still contest the weight of the evidence within the adversarial system. Amorgianos v. National R.R. Passenger Corp., 303 F.3d 256, 267 (2d Cir. 2002). "Vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence." Daubert, 509 U.S. at 596. When considering a motion for summary judgment, the court should weigh any admissible expert testimony in the light most favorable to the nonmoving party. Weyant, 101 F.3d at 854.

B. Expert Testimony Under Daubert

Prior to the adoption of the Federal Rules of Evidence, Frye v. United States, 293 F. 1013 (C.A.D.C 1923) provided the dominant standard for determining the admissibility of scientific evidence at trial. Daubert, 509 U.S. at 585. Under Frye, novel scientific evidence was admissible only if it was based on a method or theory that had gained general acceptance within the field. Frye, 293 F. at 1014. In Daubert, the Supreme Court held that Frye's "general acceptance" test was superceded by the adoption of the Federal Rules of Evidence. Daubert, 509 U.S. at 589.

In rejecting Frye, the Daubert Court emphasized the liberal

thrust of the Federal Rules of Evidence and the trend toward relaxing opinion testimony requirements. Id. at 588; see also Amorgianos, 303 F.3d at 265; Blanchard v. Eli Lilly & Co., 207 F. Supp. 2d 308, 316 (D. Vt. 2002). The Court noted the Rules' liberal relevance standard. Daubert, 509 U.S. at 587. Under Rule 401, evidence is relevant if it has any tendency to make the existence of any fact of consequence to the determination of the action more probable or less probable. Fed. R. Evid. 401. All relevant evidence is admissible unless another rule or law provides otherwise. Fed. R. Evid. 402.

With this background, the Daubert Court considered Fed. R. Evid. 702. This rule sets out the criteria under which expert opinion testimony may be admissible. Rule 702 provides that:

If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training or education, may testify thereto in the form of an opinion or otherwise, if 1) the testimony is based upon sufficient facts or data, 2) the testimony is the product of reliable principles and methods, and 3) the witness has applied the principles and methods reliably to the facts of the case.

Fed. R. Evid. 702.

Rule 702's requirement that the evidence assist the trier of fact to understand the evidence or determine a fact in issue is essentially a requirement that the evidence be relevant.

Daubert, 509 U.S. at 591. In the context of scientific evidence, the issue of relevance has also been called "fit." Id. at 591

(citing United States v. Downing, 753 F.2d 1224, 1242 (3d Cir. 1985)). The fit of the facts and methodology to the conclusion does not have to be exact. "A minor flaw in an expert's reasoning or a slight modification of an otherwise reliable method will not render an expert's opinion per se inadmissible. 'The judge should only exclude the evidence if the flaw is large enough that the expert lacks "good grounds" for his or her conclusions.'" Amorgianos, 303 F.3d at 267 (quoting In re Paoli R.R. Yard PCB Litig., 35 F.3d 717, 746 (3d Cir. 1994)).

Rule 702 also requires that expert testimony be the product of "reliable principles and methods." Fed. R. Evid. 702. The Daubert Court set forth five factors for a court to weigh in making its determination on this issue: (1) whether the theory or technique can be or has been tested; (2) whether the theory has been subjected to peer review and publication; (3) the known or potential rate of error; (4) whether the technique's operation is subject to standards governing its application; and (5) the general acceptance within the relevant scientific community. Id. at 593-94. This list was not intended as an exhaustive summary of all relevant factors. Id. at 593 (noting that "[m]any factors will bear on the inquiry, and we do not presume to set out a definitive checklist or test"). Moreover, the list of factors found in Daubert was developed for novel scientific evidence. Jugle v. Volkswagen of Am., Inc., 975 F. Supp. 576, 580 (D. Vt.

1997). Thus, other factors may be more relevant when courts consider more mainstream methods. Id.

Indeed, Courts applying Daubert have found other factors pertinent or have recognized that the Daubert factors do not apply to all types of expert testimony. Blanchard, 207 F. Supp. 2d at 315-16. Other factors courts have used in determining the reliability of expert testimony are: (1) whether the expert “employs in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field,” Kumho Tire Co., Ltd. v. Carmichael, 526 U.S. 137, 152 (1999); (2) whether the expert’s field itself lacks reliability, Id. at 151; (3) whether the testimony comes from research conducted independent of litigation, see Daubert v. Merrell Dow Pharm., 43 F.3d 1311, 1317 (9th Cir. 1995); (4) whether the expert has considered possible alternative explanations in his analysis, see Ambrosini v. Labarraque, 101 F.3d 129, 140 (D.C. Cir. 1996); and (5) the “non-judicial uses to which the scientific technique are put.” United States v. Downing, 753 F.2d 1224, 1239 (3d Cir. 1985). None of these factors is automatically dispositive. See Kumho Tire, 526 U.S. at 150. The application of each factor “depends upon the particular circumstances of the particular case at issue.” Id.

The court’s inquiry must focus on the methodology used by the expert, and not the conclusions reached. Daubert, 509 U.S.

at 595. Nevertheless, the court is not obligated to accept a conclusion if it does not reliably flow from the facts available and methodologies used. Amorgianos, 303 F.3d at 266 (citing Heller v. Shaw Indus., Inc., 167 F.3d 146, 153 (3d Cir. 1999)).

II. Applying the Daubert Standard to this Case

The facts of this case are set forth more fully in this Court's accompanying ruling on the defendants' motion for summary judgment. Op. and Order dated January 28th, 2004 (Doc. 91). Familiarity is presumed. Here, the Court only discusses those facts relevant to the challenges to the expert testimony.

A. Clancy

The plaintiffs have disclosed Dr. Jennifer Clancy ("Clancy") as an expert on liability and causation. Clancy has a Ph.D. in microbiology and immunology and has extensive experience in the area of drinking water quality. She was the Director of Water Quality at the Erie County Water Authority, Buffalo, New York. Currently, Clancy is co-owner and President of Clancy Environmental Consultants, Inc.. Over the last ten years she has worked on a number of projects related to Legionnaires' disease. See Clancy Dep. at 16:8-18:14 (Doc. 79, Ex. H).

Clancy prepared an expert report dated August 18, 2003. In her report, Clancy includes five important conclusions: (1) the water system at Greensprings was negligently maintained; (2) this negligence was responsible for the presence of *Legionella*

pneumophila within the water system; (3) Leslie Adel ("Adel") was exposed to the *Legionella pneumophila* present in the Greensprings water system; (4) Adel contracted Legionnaires' disease as a result of this exposure; and, consequently, (5) the "negligent operation and maintenance of the Greensprings water system caused" the infection of Adel. Clancy Expert Report at 8-9 (Doc. 83, Ex. 3).

Clancy bases conclusions (1) and (2) on a variety of factors. Among other things, she considered evidence of reporting violations, failures to conduct required testing, inadequate well vents and inadequate storage overflow in reaching these conclusions. Id. at 9. Clancy suggests that a "[l]ack of proper maintenance of a building water system is a well-established critical factor in the causation of Legionnaires' disease." Id.

Clancy bases conclusions (3) and (4) on the monoclonal antibody patterns found in the samples of *Legionella pneumophila* taken from Unit 24 and from Adel's lungs. Both cultures were *Legionella pneumophila* serogroup 1, monoclonal antibody pattern 1,2,5,6. See CDC Test Results (Doc. 79, Exs. D, E). In her report, Clancy states that the "likelihood that Mr. Adel acquired Legionnaires' disease from the water supply in the condominium is greater than 99.9%." Clancy Expert Report at 8. Later, at deposition, Clancy explained that she was using the figure

"99.9%" in a colloquial sense and that this figure is not the result of a precise calculation. Clancy Dep. at 81:19-82:6.

Clancy has concluded that Adel was exposed to *Legionella pneumophila* in both Unit 24 and in the spa in the recreation center. See Clancy Dep. at 81:16-18 (Doc. 79, Ex. H); Clancy Aff. ¶ 8 (Doc. 83, Ex. 3). At her deposition, Clancy testified that it was "possible" that Adel was exposed to *Legionella pneumophila* in the spa. Clancy Dep. at 151:12-19. At one point, when she was asked whether she would say if Adel was "probably" exposed, Clancy said that she would not make that conclusion. Id. at 154:20-22. Subsequently, Clancy clarified her view and noted that she does believe that it is more probable that not that Adel was exposed in the spa in the recreation center. Clancy Aff. ¶ 8.

The defendants raise a variety of challenges to Clancy's proposed testimony. First, they argue that Clancy's opinion on causation is inadmissible because a match in monoclonal antibody subtypes provides an unreliable basis for her conclusion. Second, the defendants challenge Clancy's conclusion that the Greensprings water system was negligent. Finally, the defendants argue that Clancy should not be permitted to offer an opinion about the maintenance of the recreation center spa as there is no evidence that Adel was exposed to *Legionella* in the spa.

1. Causation

The defendants argue that Dr. Clancy's opinion on causation is unreliable. In particular, they claim that monoclonal antibody ("MAb") subtyping is inadequate for epidemiological purposes. In support of their argument, the defendants point to a variety of published articles and to their own expert report from Dieter Gump, M.D..

The general thrust of the articles provided by the defendants is that MAb subtyping is useful as a preliminary tool but it is not as discriminating as some of the other methods available. See, e.g., Janet M. Pruckler, et al., Comparison of Legionella pneumophila Isolates by Arbitrarily Primed PCR and Pulse-Field Gel Electrophoresis: Analysis from Seven Epidemic Investigations, 33 J. Clinical Microbiology 2872, 2874 (1995) (Doc. 78, Ex. F) (noting that "[u]se of MAb typing alone *may* be inadequate for epidemiologic investigations, since antigenic diversity among strains with related genomic profiles has been observed") (emphasis added). Many of the articles provided by the defendants actually encourage the use of MAb subtyping. One article claims that MAb subtyping is "rapid, robust and repeatable" and is an "ideal screening tool" to use before applying other methods. Norman K. Fry, et al., A Multicenter Evaluation of Genotypic Methods for the Epidemiologic Typing of Legionella Pneumophila Serogroup 1: Results of a Pan-European Study, 5 Clinical Microbiology and Infection 462, 471-474 (1999)

(Doc. 78, Ex. J). Thus, although other methods may be more discriminatory, the use of MAb subtyping is an accepted method of investigating causation.

The defendants argue that MAb subtyping is especially unreliable in this case because the serogroup identified (serogroup 1) and the monoclonal subtype identified (the Philadelphia subgroup) are both very common. The defendants also note that *Legionella* has been found in a high percentage of residential water systems. See, e.g., Paul M. Arnow, et al., Prevalence and Significance of Legionella pneumophila Contamination of Residential Hot-Tap Water Systems, 152 J. Infectious Diseases 145 (1985) (Doc. 78, Ex. K) (finding that 32% of hot-tap water systems in an area of Chicago were contaminated with *Legionella*). They suggest that this fact, when combined with the fact that the Philadelphia subgroup is the most common *Legionella* subgroup, means that the positive test in Unit 24 provides little support for Dr. Clancy's conclusion regarding causation.

Clancy's opinion on causation is admissible. Notwithstanding the issues raised by the defendants, the Court concludes that Clancy's opinion is relevant and is based on reliable methods. It is clear that MAb subtyping provides useful epidemiological information. Even the articles submitted by the defendants suggest that MAb subtyping is accepted by the

scientific community as a useful epidemiological tool. Under Daubert, acceptance by the scientific community "can be an important factor in ruling particular evidence admissible." Daubert, 509 U.S. at 594.

The defendants note that other methods may be more accurate. Nevertheless, Rule 702 and Daubert do not require an expert to use the best method available, they only require that the evidence be relevant and reliable. See, e.g., Lentz v. Mason, 32 F. Supp. 2d 733, 746 (D.N.J. 1999). The defendants suggest that Clancy's method is unreliable because samples can have identical MAb profiles yet demonstrate antigenic diversity. According to the defendants, the use of more advanced testing methods would have enabled Clancy to rule out antigenic diversity. This goes to the weight rather than the admissibility of the evidence. Experts are not required to conclusively rule out every possibility. For example, courts have admitted physicians' expert testimony even when the physicians have failed to rule out alternative causes for their patients' maladies. McCulloch v. H.B. Fuller Co., 61 F.3d 1038, 1044 (2d Cir. 1995); see also Figueroa v. Boston Scientific Corp., 254 F. Supp. 2d 361, 366 (S.D.N.Y. 2003) ("To the extent that . . . physicians d[o] not fully consider and rule out all possible causes, such deficiencies . . . generally go to the weight of the evidence,' not admissibility, and weighing the evidence is a function for

the jury.”) (quoting Golod v. La Roche, 964 F. Supp. 841, 859 (S.D.N.Y. 1997)).

Having found that MAb subtyping is an acceptable method, the next issue is the so-called “fit” between the method and the conclusion reached in this case. The defendants claim that MAb subtyping is inappropriate for this case because the Philadelphia subgroup is the most common subgroup of disease causing *Legionella* bacteria. Once again, this goes to the weight rather than the admissibility of the evidence.

It appears that approximately 80% of cases of Legionnaires’ disease involve serogroup 1. See J.H. Helbig, et al., Pan-European Study on Culture-Proven Legionnaires’ Disease: Distribution of Legionella pneumophila Serogroups and Monoclonal Subgroups, 21 European J. Clinical Microbiology and Infectious Disease 710, 712 (2002) (Doc. 78, Ex. C) (reporting a study of European cases of Legionnaires’ disease). Although, the Philadelphia subgroup is the most common subgroup of serogroup 1, it is only found in approximately 22% of cases. See id. Given that there is evidence suggesting that the Philadelphia subgroup causes less than 25% of cases of Legionnaires’ disease, the match between the samples is an adequate basis for Clancy’s conclusion.

Finally, the defendants’ claim that *Legionella* bacteria is common in residential water systems also goes only to the weight of the evidence. The defendants point to a study suggesting that

Legionella may be present in about one third of residential hot water systems. Nevertheless, Clancy does not rely solely on a finding that *Legionella* bacteria were present in the Greensrings water system. She relies on the matching MAb profiles of the samples taken from Unit 24 and Adel. Also, deposition testimony suggests that positive findings of *Legionella* in Vermont are very rare. See Alfred Burns Dep. at 37-38, 57-58 (Doc. 82, Ex. 4). Thus, Clancy has an adequate basis for her conclusion about causation and this testimony is admissible.

2. Negligence

The defendants also challenge Clancy's opinion on negligence. The defendants suggest that the basis of Clancy's opinion is inadmissible under Fed. R. Evid. 404(b) to the extent that it relies on past failures to comply with regulations promulgated by the State of Vermont. This is a puzzling argument. Under Rule 404(b), evidence is inadmissible if it is used "to prove the character of a person in order to show action in conformity therewith." Fed. R. Evid. 404(b). Thus, evidence is only inadmissible under this rule if it attempts to prove a fact *via* an inference about a person's character. The proposed testimony does not violate this rule. Rather, the plaintiffs are trying to show negligent operation of the water supply with direct evidence of how the defendants managed the water supply.

The defendants' argument is better framed as an argument

about relevance. Essentially, the defendants are suggesting that prior regulatory violations, especially older violations, are not relevant to whether negligent operation of the water supply led to the presence of *Legionella* in February 1999. The defendants claim that most of the alleged violations amounted to nothing more than a failure to file some paperwork on time. They claim that minor procedural violations such as these are not related to the presence or absence of *Legionella*. Clancy does not rely solely upon the reporting violations, however. Clancy also bases her conclusion on the results of a sanitary survey conducted on November 6, 1998, only three months prior to Adel's visit. Moreover, Clancy relies on the fact that there were repeated regulatory violations for the conclusion that the system was not monitored with sufficient care. This evidence is neither barred by Rule 404(b) nor irrelevant. The defendants can argue at trial that the evidence is not sufficient to show negligence.

3. The Recreation Center Spa

The defendants wish to exclude any testimony regarding the maintenance of the recreation center spa. They argue that this testimony fails the "fit" requirement of Daubert as there is no evidence that Adel was exposed to *Legionella* in the spa.

In support of their position, the defendants note that none of the samples taken from the spa tested positive for *Legionella*. They also point to Clancy's deposition testimony and her apparent

reluctance to agree that Adel had “probably” been exposed to *Legionella* in the spa. While these are valid concerns, once again they go to the weight rather than the admissibility of Clancy’s testimony.

Clancy has clarified her opinion regarding the spa. In an affidavit she states that “it is more likely that not that Mr. Adel acquired Legionnaires’ disease from the hot tub at Greensprings.” Clancy Aff. ¶ 8. The defendants claim that this affidavit directly contradicts her earlier deposition testimony. Second Circuit authority suggests that a district court may ignore an affidavit if it contradicts deposition testimony. Perma Research & Dev. Co. v. Singer Co., 410 F.2d 572, 578 (2d Cir. 1969).

The defendants overstate the conflict between the affidavit and deposition. At deposition, Clancy said that *Legionella* “was probably in the spa, it was probably throughout the water system.” Clancy Dep. at 152:20-22. Moreover, her testimony exhibits a degree of uncertainty about the exact degree of probability that is being implied by the term “probably.” Perma Research does not apply “if the deposition and the later sworn statement are not actually contradictory.” Palazzo ex rel. Delmage v. Corio, 232 F.3d 38, 43 (2d Cir. 2000). Similarly, Perma Research “does not apply where the later sworn assertion addresses an issue that was not, or was not thoroughly or

clearly, explored in the deposition.” Id. Thus, although there is some conflict between the deposition and the affidavit, the Court does not find the contradiction to be so stark as to warrant excluding the affidavit.

Clancy’s deposition was adjourned and not completed. In light of the tension between her deposition testimony and her subsequent affidavit, the defendants should have an opportunity, should they desire one, for a subsequent deposition on the issues raised by Clancy’s affidavit.

Clancy has an adequate basis for her conclusion that Adel was probably exposed to *Legionella* in the recreation center spa. Her conclusion is based on three main factors. First, *Legionella* was present within the water system. Second, the spa was negligently maintained. In fact, inspectors found that the free chlorine/bromine levels were at 0.00 parts per million rather than the required range of between 2 and 5 parts per million. See DOH Public Spas and Hot Tubs Inspection Report (Doc. 82, Ex. 12). Finally, hot tubs and spas are good environment for the amplification of *Legionella*.

The negative test results from the spa do not render Clancy’s conclusion so unreliable as to be inadmissible. Clancy, who has extensive experience testing for *Legionella*, explained that *Legionella* bacteria are difficult to detect and may have been present despite these test results. Also, the tests were

conducted approximately two weeks after Adel had left Greensprings. Thus, it is possible that *Legionella* was present earlier. Of course, the defendants may raise their concerns about the test results when challenging Clancy's testimony at trial.

B. Gump

The defendants have disclosed Dieter Gump, M.D. ("Gump") as an expert. Gump's expert report outlines six conclusions. These are: (1) that there is no basis to conclude with a reasonable degree of scientific certainty that Adel contracted Legionnaires' disease from the water supply at Greensprings; (2) Adel's case represents a sporadic case, which makes it especially hard to find the source of the infection; (3) the epidemiological investigation in this case was inadequate; (4) MAb subtyping is inadequate to show that the samples taken from Adel and Unit 24 are identical strains; (5) even if Adel did contract Legionnaires' disease the recreation center spa is a very unlikely source of exposure; and (6) Adel's obstructive pulmonary disease is the result of his smoking and is not related to his case of Legionnaires' disease. Gump Expert Report at 1 (Doc. 87, Ex. A).

The plaintiffs challenge Gump's testimony on the ground that he is not qualified as an expert under Rule 702. The plaintiffs point out that, prior to his work in this case, Gump had not done

any work on Legionnaires' disease since 1997. In preparing some of his opinions, Gump relied heavily on recent journal articles and discussions with colleagues. This is especially true for opinion (4) regarding the adequacy of MAb subtyping. The plaintiffs argue that these opinions are inadmissible because they are not based on Gump's expertise. The plaintiffs are incorrect.

Gump is a medical doctor with extensive experience studying and treating Legionnaires' disease. Admittedly, most of Gump's hands-on experience occurred over ten years ago. Nevertheless, an expert may expand his or her knowledge by consulting colleagues and journal articles. To hold otherwise would be to require scientists to develop all of their knowledge through their own clinical work or experiments. This is an unrealistic expectation and it ignores the reality of science as a collaborative process. Rule 703 allows an expert to base an opinion on any evidence that is "of a type reasonably relied upon by experts in the particular field in forming opinions or inferences upon the subject." Fed. R. Evid. 703; see also Daubert, 509 U.S. at 592 (noting that "an expert is permitted wide latitude to offer opinions, including those that are not based on firsthand knowledge or observation"). Thus, as long as an expert witness is building upon a base of expertise, the Federal Rules of Evidence allow an expert to consult journal

articles and colleagues when forming an opinion.

III. Conclusion

For the reasons stated above, the defendants' Motion for Summary Judgment (Doc. 78) is DENIED to the extent that it requests the exclusion of Dr. Jennifer Clancy's expert testimony. The plaintiffs' motion to preclude the testimony of the defendants' expert, Dieter Gump, M.D. (Doc. 87) is DENIED.

Dated at Burlington, Vermont this 28th day of January, 2005.

William K. Sessions III
Chief Judge